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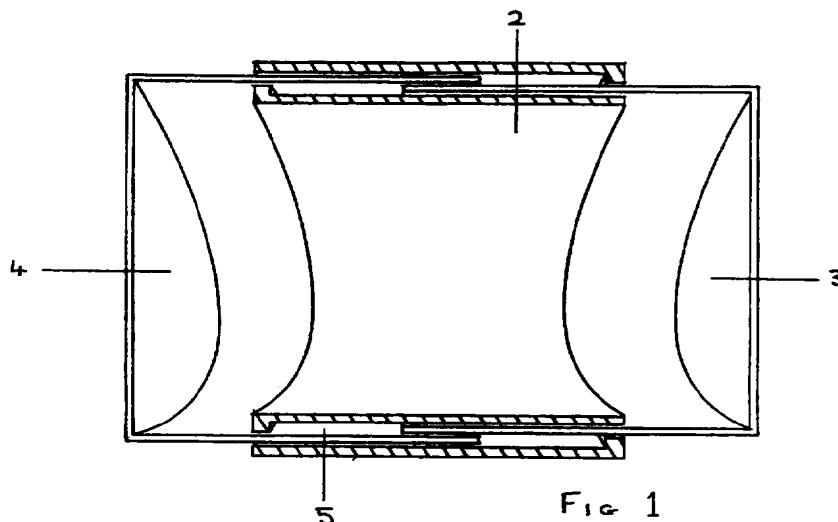
(56) Documents Cited  
EP 0435796 A1 WO 96/30598 A1

(58) Field of Search  
UK CL (Edition P ) B8H HJB  
INT CL<sup>6</sup> E02F 3/40  
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(54) Abstract Title

**Variable width excavation bucket**

(57) A variable width excavation bucket has a main chassis body 2 and a pair of extendable sides 3 and 4. The extendable sides are housed within the hollow sleeve of the main chassis body 2. To promote as much extension as is possible from the minimum size of the excavation bucket the extensions overlap within the main chassis body 2. A hydraulic ram or rams (not shown) will push the side extensions apart thus increasing the width of the bucket. Reversing the action of the ram(s) will cause the excavation bucket to decrease in width. Guides within the main chassis body will ensure smooth movement of the extensions and a suitable locking device will keep the excavation bucket at its desired width.



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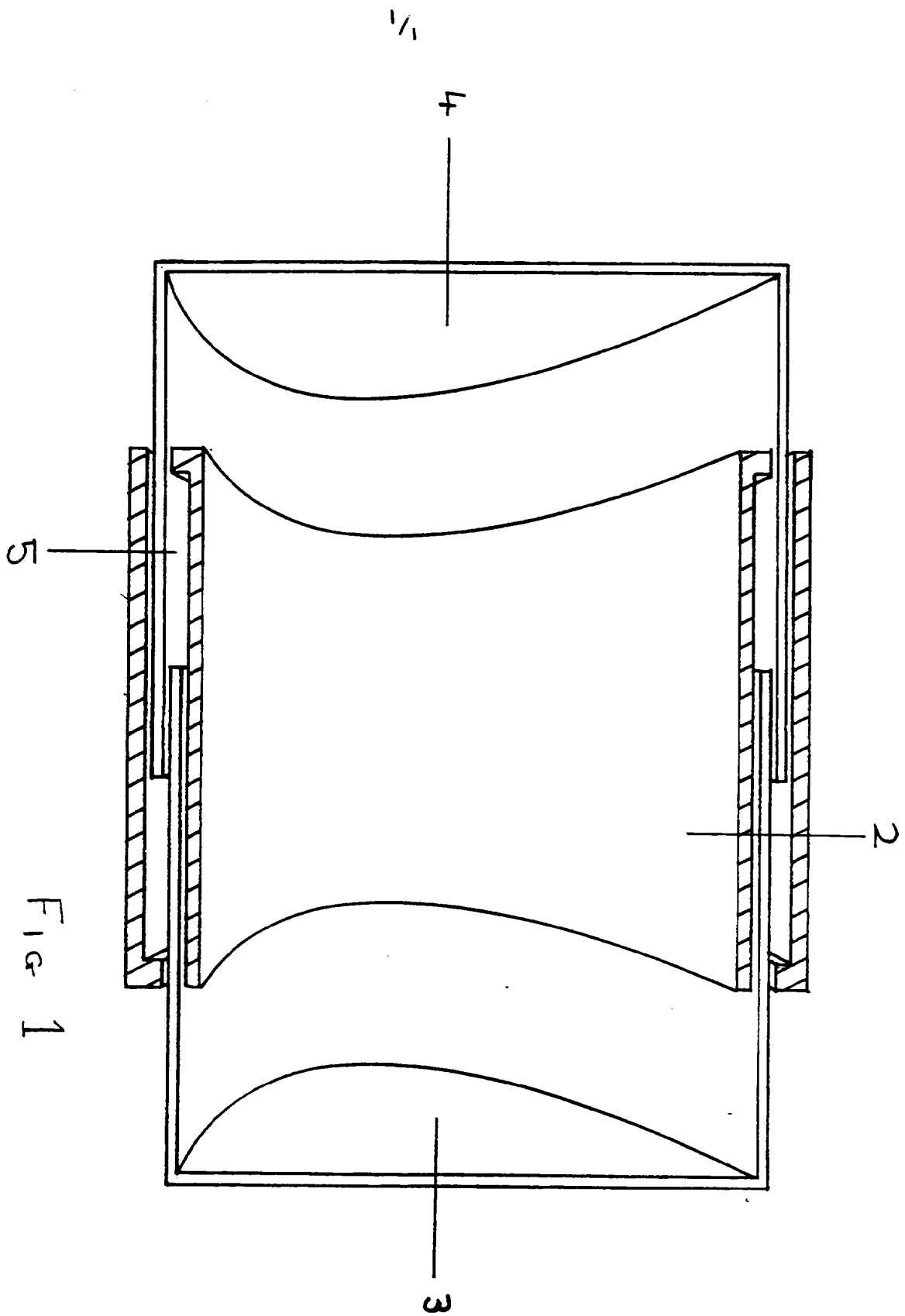


Fig 1

## **VARIABLE WIDTH EXCAVATION BUCKET**

This invention relates to a variable width excavation bucket. Excavation buckets are generally known within the construction trade as digger buckets. Digger buckets are the tool with which earth moving machinery excavate trenches, ditches and such like.

Digger buckets as a rule come in standard sizes, ranging in size from 12 inches in width, enlarging in six inch increments to 36 inches. This practice gives a selection of five standard ready made widths, 12" 18" 24" 30" and 36". The major flaw in the standard sizes of digger buckets is the operators inability to be able to excavate a trench, ditch or such like in widths larger or smaller than the standard size currently available. Accordingly, this invention would enable the operator of an earth moving machine more flexibility when digging a trench, ditch or such like, because he would not be limited to standard size excavation buckets.

According to the present invention there is provided a variable width excavation bucket comprising three major components. A twin layer sleeve in the form of an excavation bucket with the sides removed, forms the main chassis of the excavation bucket. Inserted in either side of this sleeve are moveable extensions which can be either extended or retracted. These form the sides of the excavation bucket. A means of allowing the extension sides to extend or retract in uniform manner. A means of using hydraulic power to extend or retract the side extensions simultaneously. A means of locking the side extensions at their required position.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawing in which:-

Figure 1 shows in perspective, the excavation bucket with the extension sides in there extended position.

Referring to the drawing, figure 1 shows the main chassis 2 with right hand side extension 3 and left hand side extension 4 in the fully extended position.

Side extension's 3 and 4 are inserted in the hollow sleeve 5 of main chassis 2.

In order to extend the width of the excavation bucket, side extension 3 and side extension 4 are pushed outwards by means of an hydraulic ram or rams (not shown). In order to shorten the width the extensions are pulled in.

In order to gain maximum width extension from the chassis body 2 side extensions 3 and 4 overlap when they are housed within main chassis 2.

This overlap decreases as the excavation bucket is increased in width but a proportion of overlap always remains even at full extension.

Over extension will not be possible due to an arrester, (not shown).

Guides (not shown) within hollow sleeve 5 will ensure uniform passage of extensions 3 and 4.

A suitable locking device (not shown) will enable the excavation bucket to be locked at the desired width.

## **CLAIMS**

- 1 A variable width excavation bucket comprising of a twin layer sleeve which forms the main chassis body, which, in turn acts as the housing for the overlapping moveable side extensions which form the sides of the excavation bucket.
- 2 A variable width excavation bucket as claimed in claim 1 wherein guide means are provided within the sleeve of the main chassis body to control the uniform passage of the overlapping side extensions.
- 3 A variable width excavation bucket as claimed in claim 1 or claim 2, wherein catchment means is provided on or within the main chassis body to arrest the movement of the side extensions.
- 4 A variable width excavation bucket as claimed in any preceding claim, wherein the side extensions are moved by one or more hydraulic rams.
- 5 A variable width excavation bucket substantially as described herein with reference to the accompanying drawing.



Application No: GB 9820724.4  
Claims searched: 1-5

Examiner: Dave McMunn  
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## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): B8H (HJB).

Int Cl (Ed.6): E02F 3/40.

Other: ONLINE : WPI

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	EP 0,435,796 A1 (SUAU). See Figs	1
X	WO 96/30598 A1 (BROSE). See Figs	1-4

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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